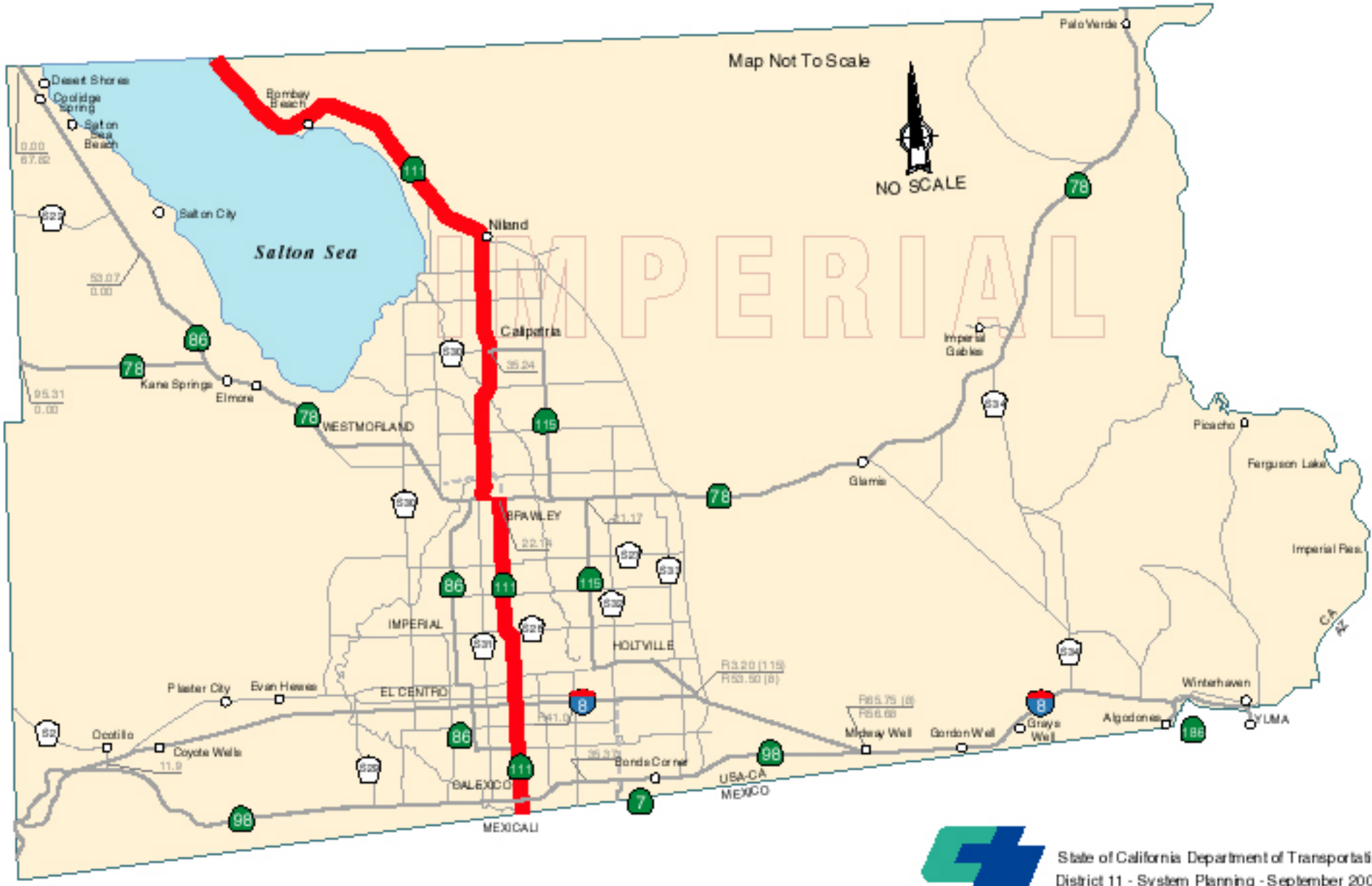
DISTRICT 11

STATE ROUTE 111 TRANSPORTATION CONCEPT REPORT



State of California Department of Transportation
District 11 - System Planning - September 2000
2829 Juan Street - San Diego, CA. 92110

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TRANSPORTATION CONCEPT SUMMARY
STATE ROUTE 111 (SR-111)
11-IMP-111 P.M. 0.0-65.4

This Transportation Concept Report (TCR) is a planning document which describes the Department's basic approach to the development of a given corridor. Considering reasonable financial constraints and projected travel demand, this TCR establishes a 20 year transportation planning concept for State Route 111 (SR-111) and identifies modal transportation options needed to achieve the concept. The concept considers operating levels of service (LOS), modal improvements, and new technologies. The TCR also considers potential long term needs for the corridor beyond the 20 year planning period. The long term needs focus on the Post-2020 Ultimate Transportation Corridor (UTC).

The TCR is a preliminary planning phase that leads to subsequent programming and the project development process. As such, the specific proposed nature of improvements (i.e., number of lanes, access control, etc.) may change in later project development stages, with final determinations made during the project study report (PSR), project report (PR), and design phases.

Each TCR must be viewed as an integral part of a planned system. The TCR is based on the completion of the 20 year system. The system has been developed to meet anticipated travel demand generated from regional growth forecasts. Removal of any portion of a route from the system will adversely affect travel on parallel or intersecting routes.

The TCR is prepared by Caltrans District staff in cooperation with local and regional agencies. They will be updated as needed, as conditions change, or as new information is obtained.

The focus of the TCR is the 2020 Transportation Concept, which includes State highway, transit, system management and transportation demand management, goods movement, international border, aviation and nonmotorized components.

ROUTE DESCRIPTION

State Route 111(SR-111) begins at the United States/Mexico International Border (P.M. IMP R0.0) in the City of Calexico and continues north 167 kilometers (103.8 miles) to the City of Indio in Riverside County. SR-111 then turns westerly and extends another 66 km (41 miles) to its terminus at I-10 (P.M. RIV 37.9) north of Palm Springs, in Caltrans District 8. There is a 1.9 km (1.2 mile)route break near Brawley (P.M. IMP 22.1-22.1E). For the purposes of this report, only the District 11 portion of SR-111 in Imperial County will be discussed.

The southernmost portion of SR-111, from the International Border (P.M. IMP R0.0) to the south junction with SR-86 (P.M. IMP R4.74) near Calexico, was added to the State Highway System in 1931. The remainder of the route was added to the system in 1933. The entire route was added to the Freeway and Expressway system in 1959.

PURPOSE OF ROUTE

SR-111 serves traffic to and from Mexico via the international Port of Entry (POE) at Calexico. SR-111 is also a major intercity connector in the Imperial County, and serves as an urban arterial in some cities in Imperial County.

The southern portion of the route, located in Imperial Valley, serves interregional, recreational, and local travel. In particular, the portion of SR-111 from I-8 to SR-78 will be the primary carrier of trucks from the international border to Los Angeles via SR-7, I-8 and SR-86. This part of SR-111 will be an expressway for trucks for the movement of international trade. The route is instrumental in providing goods movement for the agricultural activities in Imperial Valley. Agricultural goods are transported from the fields to consumer distribution centers throughout the United States. Agriculture is the major economic base in the Imperial Valley. A secondary economic source for the county is retail service for recreation activities. Major points of recreational significance served by SR-111 include the Salton Sea, Desert Park, and many off road vehicle areas. Additionally, SR-111 provides commute service between the cities of Calexico, El Centro, Brawley, Calipatria and the communities of Niland and Bombay Beach.

Parallel State routes include SR-86, located to the west of SR-111 from 7.4 km (4.6 miles) north of the International Border to the city of Coachella, and SR-115 located to the east of SR-111 from I-8 to the city of Calipatria. SR-111 intersects with SR-98, SR-86, I-8, SR-78, and SR-115.

TABLE S-1
EXISTING FACILITY AND OPERATING CONDITIONS

	Segment/ County/ Post Mile	Location	# of Lanes/ Facility Type	1998 ADT*	Peak Hour V/C Ratio	Peak Hour Operating LOS
1	IMP R0.0-R1.2	International Border to SR-98	4C	33 200	0.72	D*
2	IMP R1.2-R4.7	SR-98 to SR-86	4E	29 800	0.42	B
3	IMP R4.7-R7.7	SR-86 to I-8	4E	25 500	0.39	B
4	IMP R7.7-22.1	I-8 to E Junction SR-78 (Route Break)	2C	7 900	0.30	B
5	IMP 22.1-22.6	West Junction 78 (8th/ Main) to Adler Street	2C	11 400	0.51	C
6	IMP 22.6-32.5	Adler Street to SR-115	2C	7 000	0.32	B
7	IMP 32.5-42.5	SR-115 to English Road	2C	6 500	0.27	B
8	IMP 42.5-65.4	English Road to Riverside County Line	2C	2 700	0.11	B

* Southbound peak hour LOS may be worse than "D" at certain times.
ADT (Average Daily Traffic) shown is a five-day ADT derived from seven-day ADTs developed by Caltrans' Traffic Census
4E = Four lane expressway
4C = Four lane conventional highway
V/C = Volume to Capacity

2020 TRANSPORTATION CONCEPT FACILITY IMPROVEMENTS

Table S-2 shows improvements to SR-111 that are part of the 2020 Transportation Concept. The peak hour V/C ratio and peak hour Operating LOS listed assume completion of the proposed SR-111 highway improvements.

TABLE S-2
2020 TRANSPORTATION CONCEPT FACILITY IMPROVEMENTS

Segment/ County/ Post Mile	Location	Improvement Description	Peak Hour V/C Ratio	Peak Hour Operating LOS	Concept LOS
2 IMP R1.2 -R4.7	SR-98 to SR-86	Upgrade 4E to 6E *	1.31	F	D
3 IMP R4.7-R7.7	SR-86 to I-8	Upgrade 4E to 6E *	1.25	F	D
4 IMP R7.7 - 22.1	I-8 to New East Junction SR-78**	Upgrade 2C for 4E	0.59	C	D
4 IMP11.4	Aten Road	Construct IC at Aten Road			
4 IMP17.6	Keystone Road	Construct IC at Keystone Road			
4 IMP22.1	Junction SR-78	Construct IC at Junction SR-78			

4E = Four Lane Expressway
4C =Four Lane Conventional Highway
LOS = Level of Service
V/C = Volume to Capacity

* Future study alternatives should include consideration of a four or six lane freeway and the development of a parallel arterial street south to SR-98. In addition, the Calexico/Mexicali Border Transportation Study (June 2000) developed a series of alternative improvement concepts for the border area that would enhance local traffic circulation, airport access, and rail traffic circulation. The study conclusively illustrates the need for improvements that will be able to service existing and future cross-border traffic.

** The portion of the Brawley Bypass extending north from the existing east junction of SR-78 to SR-111 will be statutorily designated as SR-78.
However, it will be a shared roadbed with SR-111 and will be signed as SR-78/111.

*** The location of the New West Junction of SR-78 with SR-111 will be determined in the final environmental document for the Brawley Bypass.

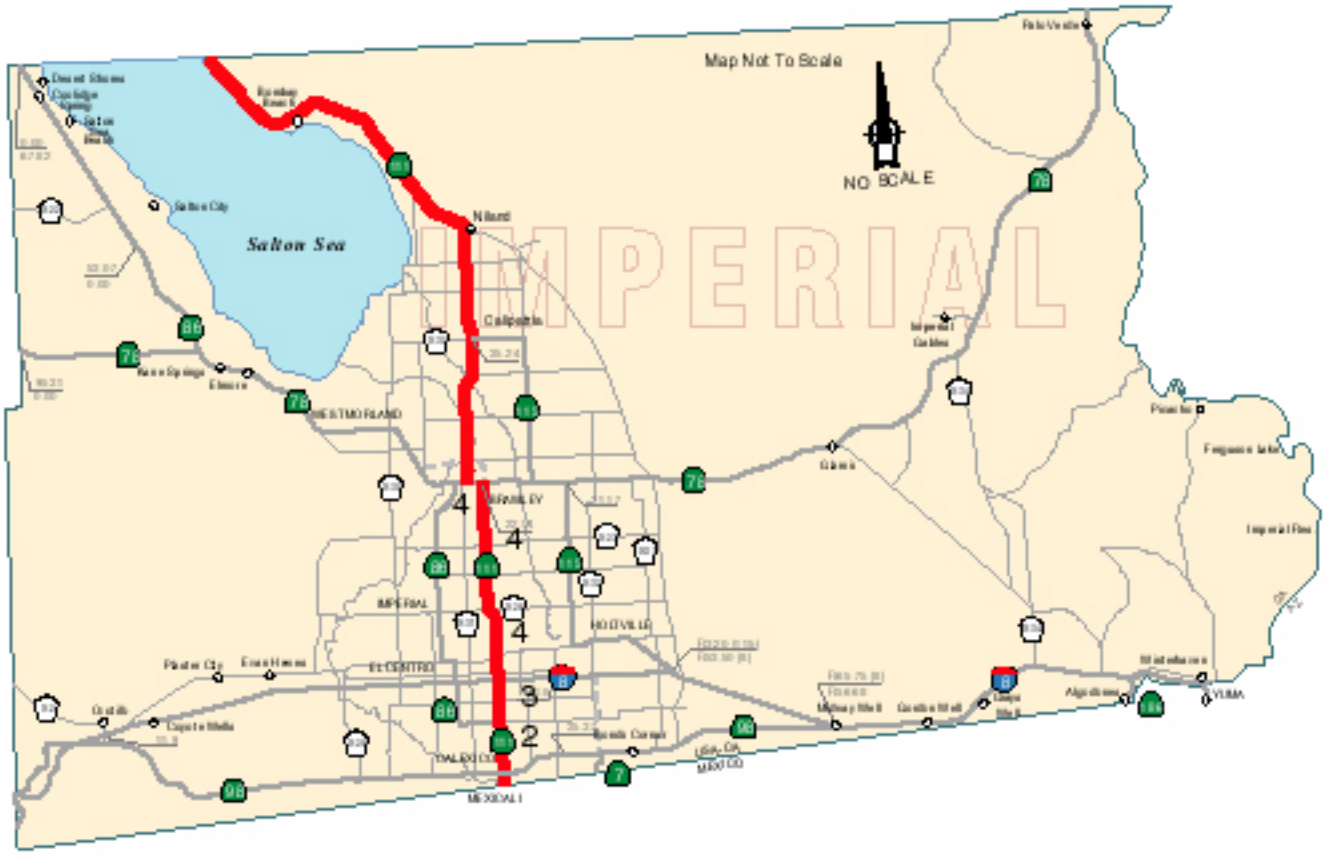
NOTES:

1) The *1997 Imperial County Transportation Plan, Highway Element*, includes a project to upgrade SR-111 to a four lane conventional highway between Brawley and Calipatria. However, we are not including this project in this Concept report because it is not warranted by future traffic projections from the Imperial County Transportation Model.

2) Post miles and location descriptions differ slightly from existing segmentation due to future improvements.

DISTRICT 11

SR-111 TRANSPORTATION CONCEPT IMPROVEMENTS



MAP REFERENCE	LOCATION	IMPROVEMENT	2020 PEAK HOUR V/C RATIO	2020 PEAK HR. OPERATING LOS	2020 CONCEPT LOS
2	SR-98 to SR-86	Upgrade 4E to 6E *	1.03	F0	D
3	SR-86 to I-8	Upgrade 4E to 6E *	1.01	F0	D
4	I-8 to SR-78	Upgrade 2C to 4E	0.59	C	D
4	Aten, Keystone,SR-78	Construct Interchanges			

* Future study alternatives should include consideration of a four or six lane freeway and the development of a parallel arterial street south to SR-98. In adition, the Calexico/Mexicali Border Transportation Study (June 2000) developed a series of alternative improvement concepts for the border area that would enhance local traffic circulation, airport access, and rail traffic circulation. The study conclusively illustrates the need for improvements that will be able to service existing and future cross-border traffic.

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State of California Department of Transportation
District 11 - System Planning - August 2000

TRANSPORTATION CONCEPT REPORT
STATE ROUTE 111 (SR-111)
11-IMP-111 P.M. 0.0 - 65.4

INTRODUCTION AND STATEMENT OF PLANNING INTENT

The system planning process consists of three products: the District System Management Plan (DSMP), the Transportation System Development Plan (TSDP), and the Transportation Concept Report (TCR).

The DSMP describes how the District intends to maintain, manage, and improve the District transportation system over the next 20 years. The DSMP is developed in partnership with regional and local transportation planning agencies. The DSMP summarizes 20 year planning concepts and proposed transportation improvements on a system wide level, and influences the development of future transportation concepts and development plans. It integrates land use, modal opportunities, regional arterial plans, transportation system management, transportation demand management, highway system improvements, and the District highway network into a comprehensive transportation program. The DSMP serves as the foundation for the TSDP and the TCRs.

The Transportation System Development Plan (TSDP) is an internal Caltrans system planning document. Its purpose is to identify by district a reasonable and effective list of multimodal transportation improvements (infrastructure/capital outlay), strategies, and demand and system management options to improve statewide, interregional and regional mobility and intermodal transfer of people and goods. It includes both a Recommended Plan and a Cost Constrained Plan component, and categorizes improvements into two time frames, 2001-2015 and post-2015. It is based on analysis of current and projected future travel demand. The TSDP replaces the District 11 Route Development Plan.

The TSDP is an internal "sketch" planning document that broadens the Department's assessment of mobility options at an early preliminary planning stage. It expands system planning from a basic analysis of state highway route deficiencies to a larger integrated intermodal and multimodal analysis of travel corridors.

Improvements, strategies, and system management options identified in the TSDP will be Caltrans "candidates" for further detailed examination in state, metropolitan, regional or local studies and processes. The TSDP is also the Department's initial identification of areas under consideration for major investment studies (MIS) with metropolitan agencies and rail/transit operators.

The TCR process was discussed in the Transportation Concept Summary.

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Purpose of Route

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Existing Facility Classifications

The federal functional classification of SR-111 is Other Principal Arterial(Urban) from the international border (PM R0.0) to SR-98 (PM R1.2). From SR-98 to the Central Main Canal (PM. R 2.7), SR-111 is classified as an Other Principal Arterial-Freeway or Expressway(Urban). From the Central Main Canal to 0.5 mile north of Mead Road (PM 21.1), SR-111 is classified as Other Principal Arterial(Rural). From 0.5 mile north of Mead Road to 1.0 mile north of SR-78 (PM 23.2), the functional classification of SR-111 is Other

Principal Arterial(Urban). The remainder of the route to the Riverside County Line is functionally classified as a Rural Minor Arterial.

SR-111 is part of the Subsystem of Highways for the Movement of Extra Legal Permit Loads (SHELL) from SR-115 (P.M. IMP 32.5) in Calipatria, to the north junction with SR-86 (P.M. RIV 28.5) in Indio. SR-111 is not part of Federal Highway Administration's (FHWA) designation of " Routes for Larger Trucks".

SR-111 is a State highway terminal access route for Surface Transportation Assistance Act (STAA) trucks for its entire length.

SR-111 is not an Officially Designated State Scenic Highway, however, the portion of SR-111 from Bombay Beach Road to the Riverside County Line is eligible to be designated as a State Scenic Highway.

The National Highway System (NHS) Designation Act of 1995 was enacted by Congress in November 1995. The purpose of the NHS is to provide an integrated national highway system that serves both urban and rural America; to connect major population centers, international border crossings, ports, airports, public transportation facilities, and other major travel destinations; to meet national defense requirements; and to serve interstate and interregional travel. In Caltrans District 11, the NHS totals 789.0 km (490.3 miles). SR-111 is part of the NHS from the International Border to the Urban/Rural Limit north of Brawley (0.8 km north of Adler Street).

To emphasize corridors that are most essential to the California economy in terms of national and international trade, a transportation network known as the Intermodal Corridors of Economic Significance (ICES) has been developed by Caltrans. To be included in the ICES system, a route should provide access between major freight intermodal facilities and serve freight traffic with the NAFTA countries of Canada and Mexico, as well as the Pacific Rim and other U.S. trade markets. The route should carry high interstate and international freight volumes and value important to the economy of California. SR-111 is included in the ICES system from the U.S./Mexico international border to SR-78.

SR-111 is not included in the statewide list of Life Line Routes for earthquake emergency response.

The Caltrans District 11 designated International Border Trade Corridor (IBTC) system consists of transportation corridors which link ports of entry and international border regions to the existing transportation system. These corridors will be the principle conduits for movement of people and goods as the overall demand for transportation increases in and out of California and the United States. The portion of SR-111 from United States/Mexico international border (PM IMP 0.0) to SR-78 (PM IMP 22.1) is included in the IBTC system.

SR-111 is part of the Interregional Road System (IRRS). It is included in the Interregional Transportation Strategic plan as a High Emphasis Route from the international border to SR-78.

For maintenance programming purposes, the State highway System has been classified as Class 1, 2, and 3 highways based on the Maintenance Service Level (MSL) descriptive definitions:

MSL 1 contains route segments in urban areas functionally classified as Interstate, Other Freeway/Expressway, or Other Principal Arterial. In rural areas, the MSL 1 designation contains route segments functionally classified as Interstate or Other Principal Arterial.

MSL 2 contains route segments classified as an Other Freeway/Expressway or Other Principal Arterial not in MSL 1, and route segments functionally classified as minor arterial not in MSL 3.

MSL 3 indicates a route or route segment with the lowest maintenance priority. Typically, MSL 3 contains route segments functionally classified as major or minor collectors and local roads, route segments with relatively low traffic volumes, and route segments being considered for relinquishment, rescission, or where a new alignment will replace the existing facility. Route segments where the District does not anticipate spending money and route segments where route continuity is necessary are also assigned an MSL 3 designation.

SR-111 is classified as MSL 1 from the international border to SR-86 (PM IMP 0.0-R4.7) and is classified as MSL 2 from SR- 86 to the Riverside County line (PM IMP R4.7-65.4).

Existing Facility

SR-111 is a four lane conventional highway from the United States/Mexico international border (P.M. IMP R0.0) in Calexico to SR-98 (P.M. IMP R1.2). From SR-98 (P.M. IMP R1.2) to I-8 (P.M. IMP R7.7), SR-111 is a four lane expressway. SR-111 continues as a two lane conventional highway from 1-8 (P.M. IMP R7.7) to the Riverside County line.

TABLE 1
EXISTING FACILITY GEOMETRICS

Segment	County/ Post Mile	No. Lanes Facility Type	Lane Width	Outside Shoulder Width	Inside Shoulder Width	Max. R/W Width	Median Width	Grade Line
1	IMP 0.0-1.2	4C	3.7(12)	0-2.4(0-8)	0	61(200)	3-11(10-36)	F
2	IMP 1.2-4.8	4E	3.7(12)	2.4(8)	1.5(5)	61(200)	3.7-14(12-46)	F
3	IMP 4.8-7.7	4E	3.7(12)	2.4(8)	1.5(5)	61(200)	14(46)	F
4	IMP 7.7-22.1	2C	3.7(12)	1.2-3.7(4-12)	0	30.5(100)	0	F
5	IMP 22.1-22.6	2C	3.7(12)	1.2(4)	0	38.7(127)	0	F
6	IMP 22.6-32.5	2C	3.7(12)	0.6-2.4(2-8)	0	30.5(100)	0	F
7	IMP 32.5-42.5	2C	3.7(12)	0.9-3.7(3-12)	0	30.5(100)	0-4.3(0-14)	F
8	IMP 42.5-65.4	2C	3.7(12)	1.2-3.0(4-10)	0	30.5(100)	0	F

NOTE: Widths are in meters, followed by feet.

There is one route break in SR-111 in Imperial County. SR-111 traffic utilizes the SR-78 alignment for approximately 1.9 km (1.2 miles) near Brawley (P.M. IMP 22.1-22.1E).

Table 2 includes a list of selected highways and surface streets that roughly parallel SR-111. These streets have the potential to serve as alternative routes for commuters. However, these streets may fail to provide an efficient alternative due to physical inadequacies and/or access conflicts. Improvements may be needed if these arterials are to provide significant relief to SR-111.

TABLE 2
PARALLEL ARTERIAL ROUTES

Segment	Arterial Name	Description
1-4	Bowker Road	International Border to Evan Hewes Highway
1-4	La Brucherie Road	International Border to Worthington Road
2-5	Dogwood Road	SR-98 to SR-78
3-8	SR-86	South junction SR-111 to north junction SR-111
3-5	Austin Road	All American Canal to SR-78
4-6	SR-115	Evan Hewes Highway to SR-111
4-6	Forrester Road	McCabe Road to Walker road
6-8	Brandt Road	SR-78 to Sinclair Road

Passenger rail service is provided parallel to and northerly and easterly of SR-111 on the Southern Pacific Yuma Line. The Amtrak train, the Sunset Limited, serves the Coachella Valley with a stop in Indio three times weekly. Amtrak feeder bus service utilizes SR-111 in Riverside County to provide a connection with the Amtrak, San Joaquin train. Service is provided once a day between Indio and Bakersfield.

The Countywide Transit System in Imperial County has eleven fixed bus routes, four of which provide early morning express service to Imperial Valley College. The City of El Centro is the hub of CTS and is linked via Westmoreland to Niland, via Heber to Calexico, and directly to Holtville. Service between Winterhaven and Yuma, as well as Bombay Beach and Brawley are the only non-El Centro based CTS routes. Weekday and Saturday service is provided for the regular routes except for Friday only Winterhaven/Yuma service, and Thursday-only service between Bombay Beach and Brawley.

With the passage of the American with Disabilities Act, Areawide Independent Mobility (AIM) was established to provide lift-equipped demand responsive service for those who are unable to use CTS's fixed route service. By statute, AIM must operate during the same hours and days as CTS. It is available to mobility disadvantaged persons, and on a space available basis to seniors over 60.

The Imperial Valley Association of Governments funds both CTS and AIM as well as Brawley, Imperial, El Centro, Salton City and Calexico Dial-A-Rides. CTS, AIM and Salton City services are contracted out by the County of Imperial Public Works Department. CTS is currently managed by a non-profit governmental agency with bus service being provided by a private-for-profit subcontractor. The other cities contract for their dial-a-ride services directly.

Dial-a-ride demand response services provide intracity service and connections to CTS. However, the City of Imperial, which is largely residential, offers its citizens daily access to

El Centro's government services and business districts. On Thursdays, the Salton City Dial-a-Ride provides transportation to Westmoreland where riders can access CTS.

Greyhound Lines Inc., a private intercity bus service, operates an express route connecting San Diego, El Cajon, El Centro and Calexico to Yuma (and other cities in Arizona). It goes as far as Phoenix, and has one flag stop in Ocotillo, California (A flag stop is an informal, usually designated bus stop where the bus will stop only if hailed by a customer). Five runs daily are made to San Diego from Calexico via El Centro, and three runs into Arizona from Calexico via El Centro.

Greyhound also makes nine daily trips north from Calexico through El Centro to Indio, Riverside, to eventually reach Los Angeles. Ten daily return trips are also available. The local route to Niland follows Imperial 111 around the east side of the Salton Sea with stops at Mecca, Thermal and Coachella. Some of the express routes that follow SR 86 on the Salton Sea's west side make flag stops at Westmoreland and Salton City.

Numero Uno, a subsidiary of Laidlaw (owner of Greyhound), provides on the hour, every hour shuttle service between Calexico and El Centro throughout the day and early evening, everyday.

Cruceros, another private bus company, operates two daily express buses which travel from Mexicali to LA in the morning, and then return in the evening. Calexico and El Centro are the only stops enroute.

ROUTE ANALYSIS

This section includes a land use/corridor growth and demographic analysis of existing and future conditions in this corridor. Accident data is also included in this section.

Corridor Growth Land Use and Demographics

Because of its size, its year round growing season and its rich lake deposited soil; Imperial Valley is a major agricultural resource for the entire country. The farming area has had irrigation for about 100 years. Imperial County land use policies support the preservation of agricultural lands in the unincorporated areas.

In addition to the agricultural area, Imperial County has very popular recreational areas including: The Salton Sea, the Anza-Borrego Desert State Park, the Imperial Sand Dunes, the Colorado River, and access to the Gulf of California.

The majority of the population growth will occur within or adjacent to existing communities. The relatively new Calexico East Port-of Entry at the United States/Mexico border will assist in accommodating expected increases in international trade as a result of the North American Free Trade Agreement (NAFTA) and policies established by the World Trade Organization (WTO). Associated growth of Maquiladora industries (twin plants on both sides of the border) will also have an influence on the amount and location of growth in Imperial County and Mexicali, Mexico.

Potential developments that would induce growth include new State prisons near Calipatria and Seeley, the expansion of the international airport at Calexico, and the growth of the geothermal industry located in the Salton Sea area west of Calipatria and southwest of Niland.

The enrollment of the Imperial Valley College is anticipated to double to 10,000 students by the year 2000. The college is located at the intersection of SR-111 and Aten Road (P.M. IMP 11.4). The Imperial Valley campus of San Diego State University currently has almost 800 students, and student enrollment is expected to increase in the future. The campus is located in the City of Calexico.

Table 3 shows population, housing and employment growth for selected Imperial County jurisdictions.

TABLE 3
POPULATION, HOUSING AND EMPLOYMENT GROWTH
SELECTED IMPERIAL COUNTY JURISDICTIONS

Location	Year	Total Population	% Change from Base Year	Total Housholds	% Change from Base Year	Total Employment	% Change from Base Year
Brawley	1990	18923	N/A	5791	N/A	8454	N/A
	1994	21738	15%	6247	8%	9129	8%
	2000	22586	19%	6829	18%	10244	21%
	2010	27294	44%	8472	47%	11732	39%
	2020	33187	75%	10779	86%	13465	59%
Calexico	1990	18633	N/A	4729	N/A	6829	N/A
	1994	28703	54%	5652	20%	7418	9%
	2000	30081	61%	6298	33%	8751	28%
	2010	37727	102%	8123	72%	10525	54%
	2020	47302	154%	10684	126%	12594	84%
Calipatria	1990	2690	N/A	720	N/A	1739	N/A
	1994	5028	87%	838	17%	2183	26%
	2000	5332	98%	948	32%	2557	47%
	2010	7020	161%	1258	80%	3057	76%
	2020	9134	240%	1696	136%	3639	109%
All Unincorporated	1990	27360	N/A	32842	N/A	7669	N/A
	1994	32984	21%	36756	12%	9408	23%
	2000	39422	445	42888	31%	14204	85%
	2010	75149	175%	60230	83%	20600	169%
	2020	119889	338%	84560	157%	28051	266%

Source: SCAG

Imperial County

The seven incorporated cities of Brawley, Calexico, Calipatria, El Centro, Holtville, Imperial and Westmorland account for three quarters of the total population of Imperial County. However, as more Specific Plan Areas (SPAs) are developed, the unincorporated areas are projected to have a 338 percent increase in population from 1990 to 2020, while the incorporated cities are expected to grow 95 percent in the same time period. A 157

percent increase in housing stock and a 95 percent growth in employment is projected for Imperial County between 1990 and 2020.

The Imperial Valley is one of the world's most fertile agricultural areas, due to the rich productive soil, abundant sunlight, flat topology and imported Colorado River water. The wide range of crops grown include vegetables, such as lettuce, carrots, onions, tomatoes, cauliflower and broccoli; animal feed, such as Sudan grass and alfalfa; grains, such as wheat; sugar beets; melons; cotton; and various citrus, fruits and nuts. Seed crops, bee products and nursery plants are also produced.

Livestock production is the second major form of agricultural production, and includes beef cattle, sheep, wool, dairy products and swine.

Imperial County is one of the most productive agricultural regions in the world. Since irrigation water was introduced in 1901, agriculture has been the single most important economic activity of Imperial County. Agriculture and its related industries employ 35 percent of the work force. Government is the second largest employer with 21 percent, followed by retail trade with 15 percent. Other significant contributors to the economy include winter visitors, State prisons near Calipatria and Seeley, the growing geothermal industry, mining, the second Mexico/USA border crossing at Calexico, and increased trade as a result of the North American Free Trade Agreement (NAFTA).

Imperial County is rich in geothermal resources. While Imperial County is a national leader in the development of its geothermal resources, development has not progressed as rapidly as projected due to high operating costs, slow growth in utility company demand and the relatively low cost of oil.

Calexico

The City of Calexico is situated adjacent to SR-111 and SR-98 and on the U.S./Mexico international border. The City of Calexico encompasses 14 square miles. Calexico had a 1998 population of 25 650 and is the fastest growing city in Imperial County. The population of Calexico is expected to increase to 37 727 by the year 2020.

Calexico began as a tent city of the Imperial Land Company in 1900 and was incorporated as a city in 1908. As it has grown, unique shopping malls and modern retail establishments have developed offering a wide selection of fine jewelry, clothing, perfumes, and local handicrafts from Mexico.

In order to assist economically distressed areas throughout California, the Enterprise Zone Program was developed by the California Trade and Commerce Agency. Special state and local incentives encourage business investment and promote the creation of new jobs. A 1.37 square mile Enterprise Zone has been created in Calexico. It includes area firms such as Wal-Mart, Chief Auto Parts, Bianchi International, Pep Boys, Western Auto and Heilig Meyers. Because of Calexico's unique location adjacent to the U.S/Mexico border, there are 18 common carriers providing interstate and intrastate truck service to transportation hubs throughout the nation. Overnight trucking access also serves the Ports of Long Beach, San Diego and Ensenada, Baja California.

Mexicali

Directly south of Calexico, California, across the International Border, lies the Capital of Baja California, Mexicali, Mexico, a thriving and growing city, with an official 1990 population of 438,377. Average annual growth for both population and employment in Mexicali is projected to be 2.9% per year. Mexicali has experienced a 1,907 percent increase in population since 1930. Mexicali's population for the year 2020 is projected to be 1,044,019, and employment is expected to increase from 173,349 in 1990 to 410,399 in 2020.

The economy of Mexicali has been historically centered around the agricultural industry. Major crops include grains, vegetables and cotton. The economy of Mexicali has recently been stimulated by the development of Maquiladora industrial plants. These plants provide labor-intensive manufacturing services for U.S.-based industries. Mexicali currently has 199 Maquiladoras, an increase from 172 Maquiladoras in 1998. It is expected to rank number one in Maquiladoras in the future, surpassing Tijuana and Juarez. In addition, Mexicali has about 1,200 industrial plants, 5,000 commercial business firms, and 1,700 service-oriented companies.

Brawley

The City of Brawley is situated at the intersection of SR-78, SR-111 and SR-86. The New River flows from the southwest to the northeast corners of the city, and the Union Pacific/Southern Pacific Railroad bisects central Brawley from north to south. Brawley is

the third largest city in Imperial County, behind El Centro and Calexico. Its 1998 population of 21 700 is expected to increase 53% to 33 187 by the year 2020.

Brawley was settled by farmers and cattlemen working in the central part of Imperial Valley. It had once been a commercial center, and due to its location along the railroad, the city also served as an important trading and shipping center. However, these functions have declined with the development of El Centro and the shipping of agricultural products directly from the field.

The Brawley General Plan and Zoning Ordinance provides for the revitalization and expansion of commercial, residential and public properties, by allowing construction of a maximum of 8757 additional dwelling units for a total of 15 199 dwelling units, and a maximum of 2.2 million square meters (23.70 million square feet) of non-residential uses for a total of 2.8 million square meters (30.15 million square feet). These figures represent a 136 percent increase in residential uses and a 368 percent increase in commercial, industrial and public facility uses. Although buildout will result in a 41 percent reduction in agricultural lands, the city is committed to provide for the conservation of agricultural lands outside the Brawley urban area.

Intergovernmental Review

Another methodology to ensure compatibility between land use and the statewide transportation system is the Caltrans Intergovernmental Review process. Potential future development projects are analyzed to determine what impacts they may have on State transportation facilities. Impacts can include level of service changes, right of way protection issues, operations and/or maintenance issues, or growth inducing/cumulative impacts. Intergovernmental Review also analyzes proposed developments to ensure consistency with regional and state transportation planning documents.

Potential major development projects in the vicinity of the SR-111 corridor that may contribute to traffic congestion on area surface streets and state transportation facilities are shown in Table 4. It should also be noted that the table includes projects for which an Environmental Impact Report, a Specific Plan or a Master Plan has been or will be prepared. Because of uncertainties associated with the existing and future socioeconomic and political climates, the scale of development may be subject to change, and it is possible that some of the listed projects may not be developed. In addition, Table 4 does not reflect potential future developments in Mexicali that could occur as new arterial streets are constructed in Mexicali.

Proposed major developments that will generate at least 10,000 daily trips are shown in Table 4. Smaller projects that have the potential to create cumulative impacts to SR-111 and area surface streets are not shown.

TABLE 4
TRIP INDUCING MAJOR DEVELOPMENT PROJECTS

Segment	Proposed Development	Dwelling Units	Acreage in hectares (acres)	Trips Generated Daily
2	Calexico Enterprise Zone		102.8(254)	60,420
3	Sharma-Harleson Annexation		55(136)	46,146
5/6	Luckey Ranch	1,353	234.7(580)	49,036
8	Bombay Beach	280	40.1(99.1)	10,500

Source: Caltrans District 11 Intergovernmental Review

The 1993 Imperial County General Plan Update identifies several Specific Plan Areas (SPA) within the county that could have an effect on future operating conditions on SR-111 and other State highway facilities. The intent of the General Plan in regard to the SPA is to ensure that future development occurring within the designated areas is in conformance with the County's General Plan Land Use Element. Any new developments proposed within the SPA must have an approved Specific Plan prior to commencement of development activities. Table 5 lists the SPAs most likely to have an effect on future operating conditions of SR-111.

TABLE 5
IMPERIAL COUNTY SPECIFIC PLAN AREAS

Imperial County Specific Plan Areas	Type of Development
Tamarack Canyon Ranch SPA	Resort/Recreational
Mesquite Lake SPA	Light, Medium And Heavy Industrial
Glamis SPA	Commercial/Retail/Services
Calexico East SPA	Commercial/Industrial/Residential
Luckey Ranch	Commercial/Industrial/Residential

2020 TRANSPORTATION CONCEPT

The 2020 Transportation Concept includes State highway, transit service, system management and demand management, goods movement, International border, and aviation and nonmotorized components. The segmentation shown is for planning purposes only and is subject to change pending further studies or project-related activities. The State highway component is comprised of the facility type and the number of lanes for 2020, the ADT for 2020, the peak hour Volume to Capacity (V/C) Ratio for 2020, the peak hour Operating Level of Service (LOS) for 2020, and the Transportation Concept LOS for 2020. The 2020 traffic projections for SR-111 are based on estimates from the 1997 Imperial County Transportation Plan (Highway Element). The 2020 traffic projections are subject to change based on periodic traffic forecasting model adjustments and ongoing supplemental transportation studies.

The 2020 peak hour Operating LOS includes all proposed transit service and State highway improvements. It also includes expansion and greater utilization of the existing arterial street network. Table 6 shows the 2020 Transportation Concept for SR-111.

TABLE 6
2020 TRANSPORTATION CONCEPT

Segment/ County Post Mile	Location	No. Lanes/ Facility Type	ADT*	Peak Hour V/C Ratio	Peak Hour Operating LOS	Concept LOS
1 IMP R0.0-R1.2	International Border to SR-98	4C	80 000	1.55	F	D
2 IMP R1.2 –R4.7	SR-98 to SR-86	6E**	80 000	1.31	F	D
3 IMP R4.7-R7.7	SR-86 to I-8	6E **	73 000	1.25	F	D
4 IMP 7.7-22.1	I-8 to New East Junction SR-78***	4E	34 000	0.59	C	D
5 IMP 22.1-23.7	Old West Jct. SR-78 to New West Jct. SR-78	Relinquished				
6 IMP 23.7-32.5	New West.Junction SR-78**** to SR-115	2C	15 000	0.58	C	D
7 IMP 32.5-42.5	SR 115 to English Road	2C	11100	0.47	C	D
8 IMP 42.5-65.4	English Road to Riverside County Line	2C	8 500	0.36	B	D

ADT = Average Daily Traffic
LOS = Level of Service
V/C = Volume to Capacity
2C/6C = Two or six lane conventional highway
4E/6E = Four or six lane expressway

* ADT'S are based on the Imperial County Transportation Model. Peak hour V/C Ratio and Peak Hour Operating LOS are planning estimates only and should not be used for design purposes.

** Future study alternatives should include consideration of a four or six lane freeway and the development of a parallel arterial street south to SR-98. In addition, the Calexico/Mexicali Border Transportation Study (June 2000) developed a series of alternative improvement concepts for the border area that would enhance local traffic circulation, airport access, and rail traffic circulation. The study conclusively illustrates the need for improvements that will be able to service existing and future cross-border traffic.

*** The portion of the Brawley Bypass extending north from the existing east junction of SR-78 to SR-111 will be statutorily designated as SR-78. However, it will be a shared roadbed with SR-111 and will be signed as SR-78/111.
**** The location of the New West Junction of SR-78 with SR-111 will be determined in the final environmental document for the Brawley Bypass.

NOTES:
• Post miles and location descriptions differ slightly from existing segmentation due to future improvements.

CONCEPT RATIONALE

An intermodal approach is necessary in order to provide for the projected increased vehicle trips and person-trips in the SR-111 corridor. This approach utilizes a wide variety of transportation improvement components to help achieve the 2020 Transportation Concept LOS.

Highway Component

The highway component of the Concept includes the study of future transportation improvements in Segment 1 related to the U.S./Mexico international border. The *Calexico/Mexicali Border Transportation Study* prepared by Katz, Okitsu and Associates (June 2000) investigates options to relieve congestion in the Calexico downtown border area. The study is a first step toward identifying the feasibility of reusing the former commercial crossing to help alleviate current and future traffic congestion as cross-border crossings increase. The development of a parallel arterial street to relieve some of the future congestion on this portion of SR-111 is needed.

Segments 2 and 3 (SR-98 to I-8) are proposed to be upgraded from a four lane expressway to a six lane expressway. In accordance with the 1997 Imperial County Transportation Plan (Highway Element), this portion of SR-111 could alternatively be upgraded from a four lane expressway to a four lane freeway. In addition, future studies should analyze the feasibility of developing a parallel arterial to SR-111. This could potentially include the southward extension of SR-86 to the proposed new border crossing or the upgrading of another existing parallel arterial street.

Segment 4 (I-8 to East Junction SR-78) is currently being upgraded in stages from a two lane conventional highway to a four lane expressway. After this new expressway is completed, the existing SR-111 will be relinquished to the County of Imperial. This portion of SR-111 will be the primary carrier of trucks from the international border to Los Angeles via SR-7,I-8 and SR-86.

Three new interchanges within Segment 4 are proposed to be constructed. The interchange locations are at Aten Rd, Keystone Rd and the new west junction of SR-78. These proposed interchanges are included in the 1997 Imperial County Transportation Plan (Highway Element).

Segment 5 (existing west junction SR-78 to new west junction SR-78/Brawley Bypass) is anticipated to be relinquished to the County of Imperial upon completion of the Brawley Bypass.

No major improvements are proposed for Segments 6, 7 and 8 at this time.

The *1997 Imperial County Transportation Plan, Highway Element*, includes a project to upgrade SR-111 to a four lane conventional highway between Brawley and Calipatria. However, we are not including this project in this Concept report because it is not warranted by future traffic projections from the Imperial County Transportation Model.

Transit Component

Currently, there is no passenger rail service directly to Imperial County. However, the California State Legislature has officially designated a commuter rail route referred to as the Los Angeles/Coachella Valley/Calexico Rail Corridor. This corridor was analyzed in depth in the Los Angeles/Coachella/Calexico Rail Corridor Study done by Caltrans in March 1995. The Imperial County Transportation Plan Rail Vision (Adopted February,

1998) provided further analysis of rail issues. The studies indicated that the future of passenger rail service in Imperial County is dependent upon a variety of factors, including:

- Determining whether there is a market for passenger rail and if so, can rail compete with bus and air travel?
- The selection and implementation of immigration and customs' procedures
- The need for expensive rail improvement in both Mexico and the United States when considering Mexico City to Los Angeles travel
- The impact from rail privatization in Mexico
- Commitment by the rail authority in Mexico to passenger rail
- Restrictions on operating equipment from foreign countries on U.S. rail lines

Regarding bus transit services, it is expected that existing systems will continue to operate. Expansion of bus services could occur in the future as population increases and if demand is warranted.

System Management and Transportation Demand Management Component

To further enhance the efficient movement of people, goods and services, Transportation System Management (TSM) and Transportation Demand Management (TDM) improvements could be implemented where appropriate.

Goods Movement Component

Under the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991, additional emphasis was placed on the movement of goods in an integrated transportation network. It is essential to identify critical elements within major goods movement corridors in order to develop effective strategies for managing, maintaining and improving transportation system connectivity. Goods movement planning incorporates analysis of impacts on noise, air quality, land use, congestion and safety. Goods movement issues can have a significant economic impact on our regional economy.

On June 9, 1998, the President signed into law PL 105-178, the Transportation Equity Act for the 21st Century (TEA-21) authorizing highway, highway safety, transit and other surface transportation programs for 6 years. TEA-21 builds on the initiatives established in the ISTEA. TEA-21 adds some new programs that address traffic safety, economic competitiveness and international trade.

As indicated in an earlier section of this report, SR-111 is a crucial goods movement route in Imperial County. SR-111 is part of the Intermodal Corridor of Economic Significance (ICES) system.

Currently, SR-111 carries a heavy volume of commercial vehicle traffic, given that the route serves agricultural farm-to-market truck traffic. Future highway improvements to SR-111 will facilitate international and interstate movement of goods.

The number of trucks crossing at the Calexico Ports of Entry has increased from 282,800 (both directions) in 1988 to 444,200 (both directions). Based on post-NAFTA historical

trends from 1993 to 1998, the two-way truck traffic is projected to increase to 868,400 by the year 2020.

International Border Component

The ISTEA required studying the advisability of establishing a discretionary international border crossing program and the development of a multimodal assessment of existing and emerging international trade corridors within Canada, Mexico and the United States. Because of District 11's geographic location adjacent to the State of Baja California, Mexico, and the passage of the North American Free Trade Agreement (NAFTA), it is expected that transportation and trade issues related to the California/Mexico International border will increase in importance in the future for Caltrans District 11.

Improvements to SR-111 may assist in accommodating increased trade due to NAFTA and the policies implemented by the World Trade Organization (WTO).

Aviation Component

There are several small airports serving general aviation air travel in the Imperial Valley and/or near to SR-111. The Calexico International Airport is just west of SR-111 and currently averages 74 aircraft operations per day. Brawley Municipal Airport is just northeast of Brawley and averages 137 aircraft operations per day. Cliff Hatfield Memorial Airport in Calipatria averages 92 aircraft operations per day.

In addition, the Mexicali Airport has regularly scheduled jet service to various cities in Mexico and is in the process of being privatized.

These aviation facilities may see increased use as population increases and as demand is warranted.

Non-Motorized Component

Bicycle travel is allowable on SR-111. Bicyclists utilize the paved, striped shoulder for travel, with the exception of the portion of SR-111 from the U.S/Mexico international border to SR-98. In this segment, there are no shoulders, and bicyclists must ride on the right side of the traffic lane.

In conjunction with SCAG, the County of Imperial is proposing to develop an Imperial County Bicycle Plan.

AIR QUALITY

SR-111 is located within the Salton Sea Air Basin (SSAB). Air quality planning for Imperial County is administered through the Imperial County Air Pollution Control District (IAPCD).

The regional emissions from within the Salton Sea Air Basin do not significantly affect the regional air quality in Imperial Valley. The only pollutants for which federal and/or state air quality standards have been exceeded in the ICAPCD area are ozone (O_3) and suspended particulates (PM_{10}). The standards for O_3 are exceeded only a few times a year in Imperial County. PM_{10} standards are exceeded primarily due to field burning and travel on unpaved roads. Refuse burning in Mexicali, Mexico is an additional factor in the exceedance of PM_{10} within Imperial County, particularly in the southern portion of the county.

The U.S. EPA and the Secretaria de Desarollo Social (SEDESOL) have agreed to bilateral participation in a particulate study between Mexicali and Imperial County. The *Imperial Valley/Mexicali Cross Border PM_{10} Transport Study* (April 1995) was prepared for the U.S. EPA Region IX, San Francisco, CA, by the Desert Research Institute, University of Nevada, Reno. The goal of the study was to determine the causes of standard exceedances on the U.S. side of the border and to determine the effect of cross-border transport on these exceedances. The study will include workshops on emission survey techniques, ambient sampler operation and maintenance, meteorological measurement systems, and training in particulate pollution modeling techniques.

The study conclusions focused on scientific technicalities associated with PM_{10} measuring and modeling efforts. Annual average PM_{10} mass concentrations at the Calexico test site exceeded the federal annual PM_{10} standard by more than 20%.

INTELLIGENT TRANSPORTATION SYSTEM (ITS)

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) called for the creation of an economically efficient and environmentally sound transportation system that will move people and goods in an energy efficient manner. This can no longer be done simply by adding to the existing highway system. The Intelligent Transportation System (ITS) offers the potential to improve safety and efficiency in nearly every function of our complex multimodal transportation system by applying a broad range of diverse technologies. The U.S. Department of Transportation has defined an Intelligent Transportation Infrastructure (ITI) Program consisting of traffic detection, monitoring, communications and control systems required to support a variety of ITS products and services.

New Technology

ITI/ITS Programs offer the potential to deploy and operate traffic signal control systems, freeway management systems, transit management systems, incident management systems, electronic fare payment systems, electronic collection systems and multimodal traveler information systems.

The Secure Electronic Network for Traveler's Rapid Inspection (SENTRI) Program, a National Performance Review Program is deploying Dedicated Commuter Lanes (DCLs) and Exit Control Systems (ECSs) at Otay Mesa, San Ysidro, El Paso, Hidalgo, Calexico and other Southwest international POEs. Both DCLs and ECSs utilize automated vehicle identification for positive identification of vehicles.

Future SENTRI applications for border crossings include the development of the In-Vehicle Voice Verification System (IVVVS). A border crossing commuter will be asked to record a voice message that will be stored in the Immigration and Naturalization Service database. When crossing the border, the commuter will articulate the same predetermined phrase into a unit that looks like a telephone handset. The vocalization will verify that the speaker is a participant in the program. The entire process will take only a few seconds and allow an expeditious crossing.

The two San Ysidro DCLs have been operational since June, 1999. Otay Mesa has an operational prototype DCL and work is underway to upgrade that system to the standard configuration by December, 1999. Calexico is scheduled to be equipped with a DCL system in the Year 2000.

License Plate Readers (LPRs) exist on the inbound and outbound I-5 lanes at the San Ysidro POE. LPRs are also used at the Calexico East POE for the inbound and outbound lanes.

The North American Trade Prototype (NATAP) was developed by the U.S., Canada and Mexico to streamline the customs clearance of commercial goods across the border. NATAP was deployed at six sites, including Otay Mesa, in 1998. Successful aspects of NATAP have been incorporated into mainstream U.S. Customs procedures for the exchange of information between traders, carriers, brokers and Customs.

Additional detailed information regarding new technology issues at the U.S./Mexico is included in the *Southern California Priority Corridor ITS Strategic Development Plan – Commercial Vehicle/International Border Crossing Element (Final Draft, January, 1998)* prepared by consultants' Parsons Brinckerhoff Farradyne Inc. and Transcore.

COMPARISON OF CONCEPTS

The purpose of this section is to document alternative Transportation Concepts that were considered. The Concept from the January,1992 Route Concept Report (RCR) for the year 2010 is compared with this 1999 TCR for the year 2020. Table 7 is comprised of a

segment by segment comparison between the 1992 Route Concept Report and this current updated Transportation Concept Report.

TABLE 7
COMPARISON OF CONCEPTS

1992 Route Concept for 2010		1999 Transportation Concept for 2020	
Location	**No. Lanes & Facility Type/ Concept LOS**	**Location**	**No. Lanes & Facility Type/ Concept LOS**
International Border to SR-98	6C/D	International Border to SR-98	4C/D
SR-98 to All American Canal	4E/D	SR-98 to SR-86	6E/D
I-8 to 1.1 mile south of east SR-78 junction(RB)	4E/D	SR-86 to I-8	6E/D
1.1 mile south of East SR-78 junction to East SR-78 junction (RB)	4E/B	I-8 to New East Junction SR-78	4E/D
West junction SR78 to urban/rural limit	4E/D	Old West Jct SR-78 to New West.Jct. SR78	Relinquished
Urban/rural limit to future junction SR-78	4E/D	New West Jct. SR-78 to SR-115	2C/D
Future junction SR-78 to SR-115	4E/D	SR-115 to English	2C/D
SR-115 to Riverside County line	4E/D	English to Riverside County Line	2C/D

2020 TRANSPORTATION CONCEPT FACILITY IMPROVEMENTS

Table 8 shows improvements to SR-111 that are part of the 2020 Transportation Concept. The peak hour V/C ratio and peak hour Operating LOS listed assume completion of the proposed SR-111 highway improvements.

TABLE 8
2020 TRANSPORTATION CONCEPT FACILITY IMPROVEMENTS

Segment/ County/ Post Mile	Location	Improvement Description	Peak Hour V/C Ratio	Peak Hour Operating LOS	Concept LOS
2 IMP R1.2 -R4.8	SR-98 to SR-86	Upgrade 4E to 6E *	1.31	F	D
3 IMP R4.8-R7.7	SR-86 to I-8	Upgrade 4E to 6E *	1.25	F	D
4 IMP R7.7 - 22.1	I-8 New East Junction SR-78**	Upgrade 2C for 4E	0.59	C	D
4 IMP11.4	Aten Road	Construct IC at Aten Road			
4 IMP17.6	Keystone Road	Construct IC at Keystone Road			
4 IMP22.1	Junction SR-78	Construct IC at Junction SR-78			

4E = Four Lane Expressway
4C =Four Lane Conventional Highway
LOS = Level of Service
V/C = Volume to Capacity

* Future study alternatives should include consideration of a four or six lane freeway and the development of a parallel arterial street south to SR-98. In addition, the Calexico/Mexicali Border Transportation Study (June 2000) developed a series of alternative improvement concepts for the border area that would enhance local traffic circulation, airport access, and rail traffic circulation. The study conclusively illustrates the need for improvements that will be able to service existing and future cross-border traffic.

** The portion of the Brawley Bypass extending north from the existing east junction of SR-78 to SR-111 will be statutorily designated as SR-78.
However, it will be a shared roadbed with SR-111 and will be signed as SR-78/111.

*** The location of the New West Junction of SR-78 with SR-111 will be determined in the final environmental document for the Brawley Bypass.

NOTES:

1) Additional locally supported improvements to SR-111 are not included.
2) Post miles and location descriptions differ slightly from existing segmentation due to future improvements.

POST-2020 ULTIMATE TRANSPORTATION CORRIDOR

The post-2020 Ultimate Transportation Corridor (UTC) describes the long term (beyond the 20 year planning period) right of way requirements for a particular segment. The long term needs are determined by Transportation Planning activities, which include investigation and analysis of Community Plans, General Plans, Transportation Plans, Land Use Plans, Environmental Documents, and other planning documents. The intent is to take advantage of or develop opportunities for long term right of way acquisition and to work with local and regional agencies to implement corridor preservation measures.

The UTC proposes the number of lanes, the facility type, and the potential right of way width in feet. This width can be variable depending upon the dimensions of cross-sectional elements and specific circumstances, which may require narrow widths. Right of way width includes the roadbed, shoulder, clear recovery zone, and clearance from the right of way line to the catch point of the cut or fill slope. Additional right of way may be required for structures, slope modifications and drainage facilities.

The UTC number of lanes and facility type for SR-111 is the same as the 2020 Transportation Concept.

LIST OF SYSTEM PLANNING ACRONYMS

ADT	Average Weekday Traffic
APCD	Air Pollution Control District
ATSD	Advanced Transportation System Development
AVI	Automated Vehicle Identification
CCAA	California Clean Air Act
D/C	Demand to Capacity Ratio
DSMP	District System Management Plan
ETTM	Electronic Toll Collection and Traffic Management
F & E	Freeway and Expressway System
FHWA	Federal Highway Administration
GPA	General Plan Amendment
HOV	High Occupancy Vehicle
IBTC	International Border Trade Corridor
IRRS	Interregional Road System
ISTEA	Intermodal Surface Transportation Efficiency Act
ITI	Intelligent Transportation Infrastructure
ITS	Intelligent Transportation Systems
IVAG	Imperial Valley Association of Governments
LOS	Level of Service
MIS	Major Investment Study
MSL	Maintenance Service Level
NAFTA	North American Free Trade Agreement
NAHSC	National Automated Highway System Consortium
NCTD	North County Transit District
NHS	National Highway System
PHV	Peak Hour Volume
P.M.	Post Mile
PR	Project Report
PSR	Project Study Report
R/W	Right of Way
RCR	Route Concept Report
SPA	Specific Plan Area
STAA	Surface Transportation Assistance Act
STIP	State Transportation Improvement Program
TASAS	Traffic Accident Surveillance and Analysis System
TCM	Transportation Control Measures
TCR	Transportation Concept Report
TDM	Transportation Demand Management
TEA-21	Transportation Equity Act for the 21st Century
TSDP	Transportation System Development Plan
TSM	Transportation System Management
UTC	Ultimate Transportation Corridor
V/C	Volume to Capacity Ratio

LEVEL OF SERVICE (LOS) DEFINITIONS

LOS is defined as a qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers. An LOS definition generally describes these conditions in terms of such factors as speed, travel time, freedom to maneuver, comfort and convenience, and safety. LOS definitions can generally be categorized as follows:

LOS	D/C	Congestion/Delay	Traffic Description
		(Used for all conventional highways)	
"B"	<0.45	None	Free to stable flow, light to moderate volumes.
"C"	0.46 - 0.65	None to Minimal	Stable flow, moderate volumes, Freedom to maneuver noticeably restricted.
"D"	0.66 - 0.85	Minimal to Substantial	Approaches unstable flow, heavy volumes, very limited freedom to maneuver.
"E"	0.86 - 1.00	Significant	Extremely unstable flow, maneuverability and psychological comfort extremely poor.
"F"	>1.00	Considerable	Forced or breakdown flow. Delay measured in average travel speed(MPH).Signalized Segments experience delays >60.0 seconds per vehicle.
		(Used for two and four lane freeways and expressways)	
"A"	<.34	None	Free flow.
"B"	0.35-0.52	None	Free to stable flow, light to moderate volumes.
"C"	0.53-0.69	None to minimal	Stable flow, moderate volumes, freedom to Maneuver noticeably restricted.
"D"	0.70-0.92	Minimal to substantial	Approaches unstable flow, heavy volumes, very limited freedom to maneuver.
"E"	0.93-1.00	Significant	Extremely unstable flow, maneuverability and psychological comfort extremely poor.
LOS	**D/C**	**Congestion/Delay**	**Traffic Description**

(Used for six lane freeways and expressways)

"A"	< .39	None	Free flow
"B"	0.40-0.59	None	Free to stable flow, light to moderate volumes
"C"	0.60-0.74	None to Minimal	Stable flow, moderate volumes Freedom to maneuver noticeably restricted
"D"	0.75-0.92	Minimal to Substantial	Approaches unstable flow, heavy volumes, very limited freedom to maneuver
"E"	0.93-1.00	Significant	Extremely unstable flow, maneuverability and psychological comfort extremely poor

I approve this Transportation Concept Report as the guide for development of State Route 111 over the next 20 years.

Submitted By:

Carol Boland — 9/18/00

CAROL BOLAND, Chief
System Planning Branch

Date

Recommended By:

Richard A. Nordahl — 9/19/00

RICHARD A. NORDAHL
Acting District Division Chief, Planning

Date

Approved By:

Gary L. Gallegos — 9-20-2K

GARY L. GALLEGOS
District Director

Date